What Educators Need to Know About the Science of Reading

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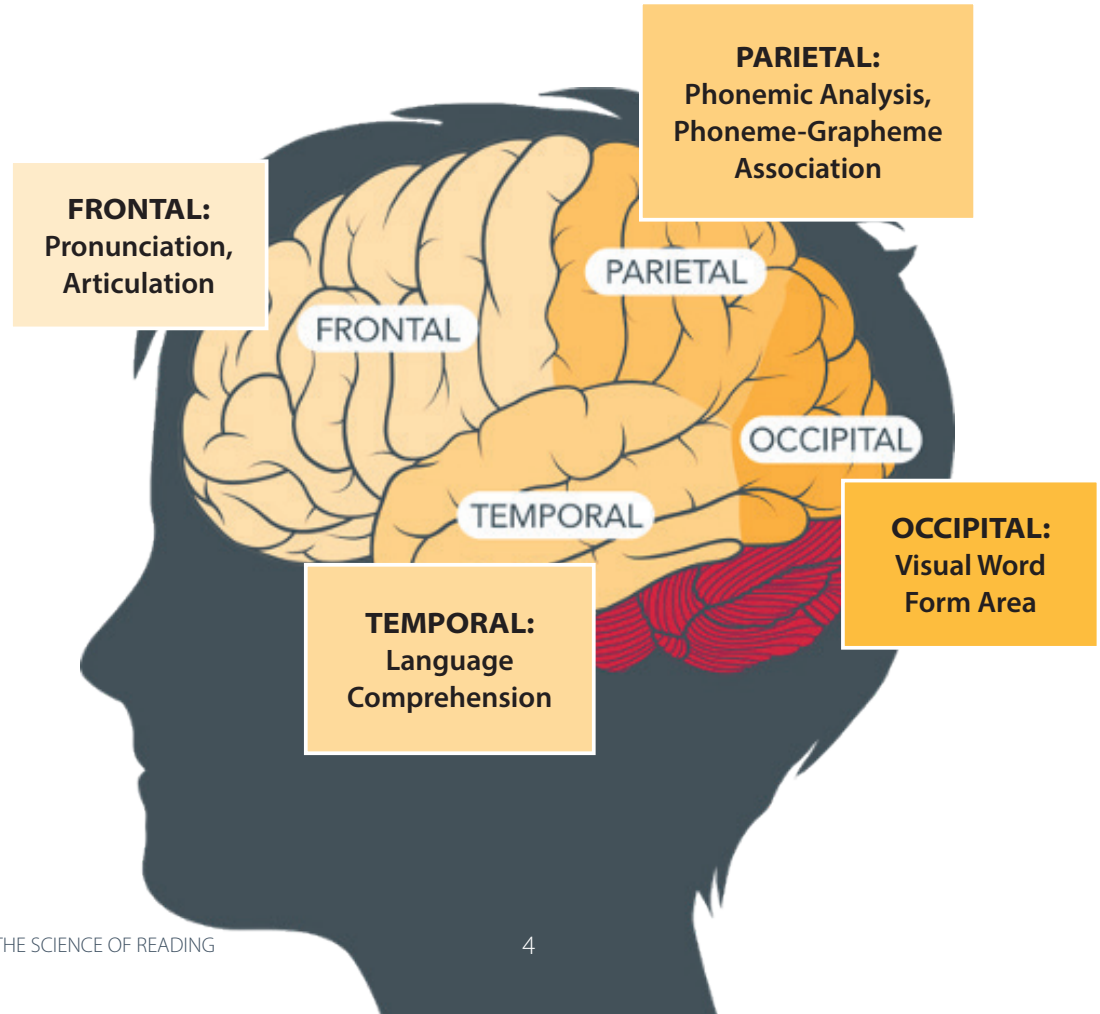
THE COMPLEXITIES OF TEACHING READING

TEACHING READING IS COMPLEX

"Teaching reading IS rocket science."—Dr. Louisa Moats

Teaching reading is a complex process that incorporates decades of research into how students learn and how reading should be taught. Educators understand that teaching students to read fluently is the key to their overall academic success.

We know more today about how children learn to read, causes of reading difficulties and how to prevent them, and the essential components of effective reading instruction than ever before.



MOST STUDENTS CAN LEARN TO READ

Nearly all students are capable of learning to read:

- About 20% of elementary school students nationwide have serious problems learning to read.
- At least another 20% are at risk for not meeting grade-level expectations.

The National Institutes of Health estimate that only 5% of young readers have cognitive impairments that are severe enough to prevent them from acquiring the skills they need to become fluent readers.

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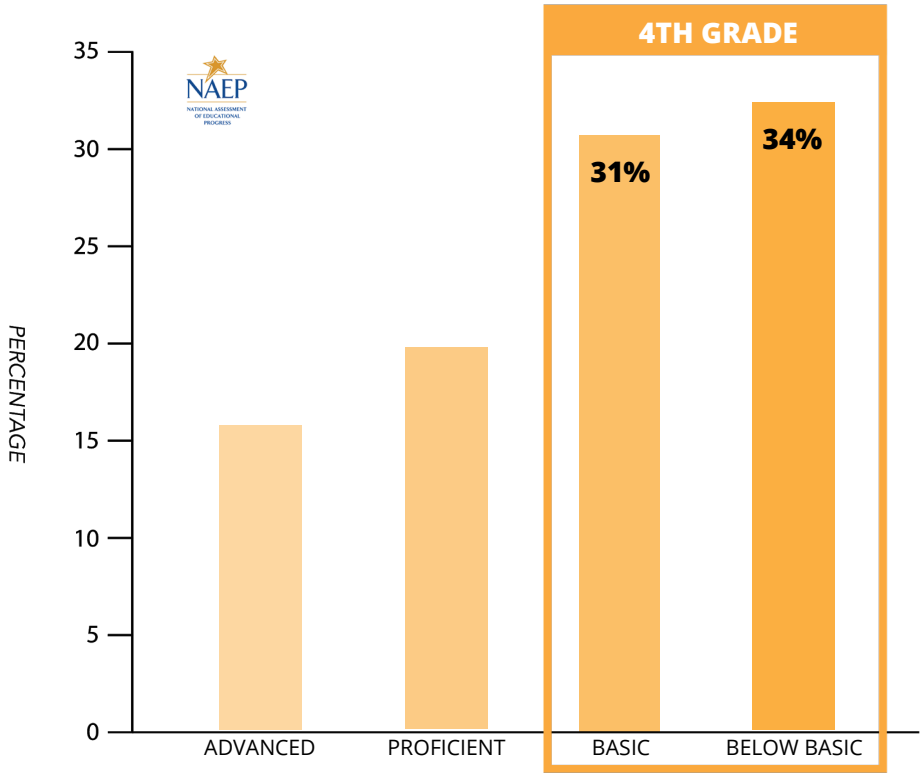
LEARNING HOW TO TEACH READING IS ALSO COMPLEX

Educators understand the importance of literacy and care deeply about helping students succeed. Unfortunately, most teacher preparation programs and professional development series do not prepare teachers to understand and effectively implement the science of reading in their daily instructional practices.



Only

51%

of higher education teaching preparation programs include the science of reading

National Council on Teacher Quality

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RESPECTED AUTHOR SAYS READING FAILURE IS UNNECESSARY

Dr. Louisa Moats, renowned literacy expert, former vice president of the International Dyslexia Association, and author of the LETRS® professional learning program, believes most reading failure is unnecessary. In her article Teaching Reading Is Rocket Science: What Expert Teachers of Reading Should Know and Be Able to Do, Dr. Moats says that classroom instruction is the critical factor in preventing reading challenges. Teaching reading IS rocket science, but it is science with clear, specific, practical instructional strategies that all teachers should learn, know how to implement, and be supported in using.

Louisa Moats, Ed.D.

THE 'READING IS NATURAL' MYTH

READING IS LEARNED

Humans are not hardwired to read. Our ability to learn spoken language is so natural we hardly remember learning to speak. Reading, on the other hand, is not at all natural; it is a more-or-less modern innovation. In fact, anthropological records indicate the oldest alphabet is likely no more than 8,000 years old, a blip in time from an evolutionary standpoint.

Benjamin Riley's article, Drawing on Reading Science Without Starting a War, gives some good news! With explicit phonics instruction, children can learn how written letters relate to sounds, allowing them to decode text. Students will transition from decoding text to becoming fluent readers with practice. Teachers should always make books and other texts available for reading practice, but this should never take the place of direct reading instruction.

Comprehension strategies have their place, but they will never compensate for students' lack of vocabulary or content knowledge; use them but don't overuse them. In the article How We Learn, Daniel Willingham cites compelling evidence that students must be able to decode fluently before any reading strategy can be effective.

This Science of Early Learning: How Young Children Develop Agency, Numeracy, and Literacy article provides excellent information about:

- How young children develop a sense of self (p. 4)
- How young children learn the meaning of the alphabet (p. 8)
- How young children become fluent readers, learn to understand what they read, and learn to express their ideas in writing (pp. 8–11)

WHAT IT'S LIKE TO LEARN TO READ

For many of us, learning to read appears to come naturally. We do not recall HOW we learned to read; we just know the words on the page started to make sense at some point. Struggling readers will never forget the challenges they faced, many of which continue for them today.

While the debate rages on, Willingham believes we are more aligned than polarized. In his blog, Just How Polarized Are We About Reading Instruction?, he cites six statements about children learning to read that he believes most educators would be hard-pressed to disagree with:

- The vast majority of children first learn to read by decoding sound.
- A very small percentage of children teach themselves to read without adult input.
- Children who receive systematic instruction in phonics can decode much more quickly than those who receive haphazard instruction.
- Phonics instruction is not a literacy program.
- Researchers have discovered that claims students are bored by systematic phonics instruction, which might negatively impact reading motivation, don't hold up.
- That said, there's certainly the potential for reading instruction to tilt too far in the direction of phonics instruction.

THE SCIENCE OF READING

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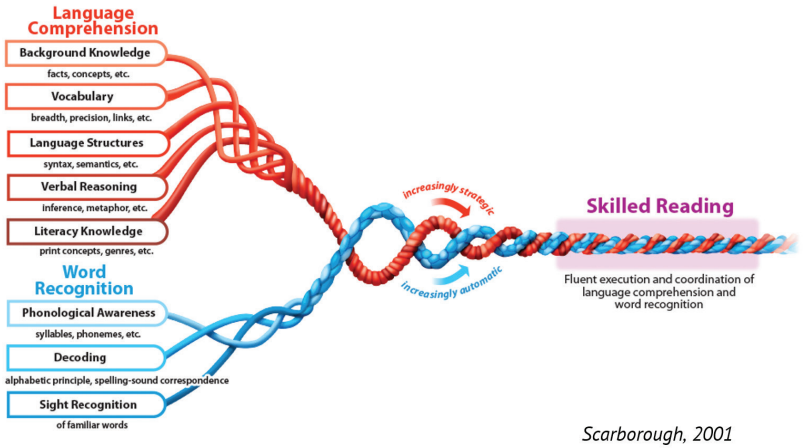
THE SIMPLE VIEW OF READING

In 1986, psychologists Philip Gough and William Tunmer developed a scientific theory of reading comprehension they called "the Simple View of Reading." Essentially, it states:

- Strong reading comprehension can only happen when both decoding and language comprehension are strong.
- The formula seems simple: D x L = RC
  (Decoding x Language = Reading Comprehension)

Hollis Scarborough expanded on this idea in 2001 with the "Reading Rope," a simple and elegant model showing that when word recognition and language comprehension subskills combine, reading happens.



Scarborough, 2001

- In a 2000 report, the National Reading Panel identified five components essential to reading that, when taught skillfully and thoroughly, are highly effective:
  - Phonemic awareness—the awareness of the smallest units of sound (phonemes) and the ability to manipulate these sounds
  - Phonics—a way of teaching that stresses the acquisition of letter-sound correspondences and their use in reading and spelling
  - Fluent text reading—reading with accuracy, at an appropriate rate, and with expression
  - Vocabulary—the understanding of words and meanings
  - Comprehension—understanding the connected text

Click here to read more about what this means and how to apply it.

WHAT IS THE SCIENCE OF READING?

The phrase "science of reading" refers to the body of research that reading experts and brain scientists have conducted on how humans learn to read. According to literacy expert and renowned author Dr. Louisa Moats, science of reading studies "...have revealed a great deal about how we learn to read, what goes wrong when students don't learn, and what kind of instruction is most likely to work the best for the most students." (Source: Moats 2019)

Addressing Learning Loss With the Science of Reading

With K–3 students returning to classrooms after an unprecedented year of interrupted learning, gaps in foundational reading skills are being identified and literacy learning loss is being assessed. As schools and districts work toward student learning recovery, the importance of closing reading gaps and maintaining strong skills is more important than ever.

In the white paper, Trust the Science of Reading to Inform Instruction, author Suzanne Carreker suggests the science of reading is especially essential for students struggling with learning and reading challenges. Carreker writes, "...the science of reading solidifies an understanding of how language and writing systems work by informing the why, what, and how of effective instruction, both including and going beyond phonics. While instruction informed by reading science is necessary for all students, it is essential for students who are at risk for reading difficulties due to dyslexia, developmental language disorder, deficits in executive function, status as an English learner, or other factors. Ultimately, instruction that is informed by the science of reading is the only proven way to ensure students can become proficient readers and confident learners across the curriculum."

Read Suzanne Carreker's white paper, Trust the Science of Reading to Inform Instruction, here.

HOW IT WORKS

ADDRESSING THE STRUGGLING READER

Structured Literacy

Structured Literacy is an instructional approach informed by decades of gold-standard research on the science of reading. The International Dyslexia Association coined the term to help educators differentiate reading instruction or programs that are truly informed by the science of reading from those that are not. As the science of reading research identifies that decoding and language comprehension skills are critical skills to teach students learning to read, Structured Literacy recognizes that those skills must be taught explicitly, systematically, cumulatively, and diagnostically/responsively.

How These Skills Must Be Taught

Explicit
(directly taught)

Systematic
(logically ordered skills; simple to complex)

Cumulative
(new learning building on prior learning)

Diagnostic/ Responsive
(progress is monitored; instruction is adjusted)

Do a deep dive into Structured Literacy in these white papers:
Dyslexia and Structured Literacy Connections
Structured Literacy: Applying the Science of Reading in the Classroom

READING SUCCESS STARTS HERE

Voyager Passport®

Help K–5 students reading below grade level with evidence-based Voyager Passport reading intervention. Research-proven and based on science of reading pedagogy, this intervention accelerates student literacy achievement by targeting critical priority skills and providing strategies learners need to become fluent, on-level readers. Typically used as a Tier 2 intervention, the solution delivers a Structured Literacy approach with comprehensive, explicit, and systematic instruction in the five essential components of reading, plus language and writing. Rated Strong by Evidence for ESSA, Voyager Passport can be effectively used as a supplement to any core reading curriculum to help students reach proficiency.

Get a FREE Voyager Passport toolkit and access the tools and resources educators need to help students reach literacy success.

Voyager Passport Includes Reading Rangers

Reading Rangers is an interactive, science of reading-based online practice solution for K–5 students specifically designed to strengthen foundational literacy skills and improve vocabulary, fluency, automaticity, and comprehension. Highly engaging and comprehensive, Reading Rangers provides the additional practice students need to be successful in English Language Arts.

Enjoy a Free Trial of Reading Rangers interactive online reading practice.

THE CHALLENGE

In today's schools, 20% to 40% of students are up to two years behind when it comes to literacy achievement. These students need more intensified, explicit instruction and support to become proficient readers, or the achievement and opportunity gap will continue to widen. In addition, teachers need resources and support to help each student reach grade-level literacy.

Get more information about Voyager Passport and Reading Rangers here.

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